

Amendments to the Specification:

Please add the following section headings before the paragraph beginning on line 3 of page 1 of the application:

-- BACKGROUND OF THE INVENTION:

1. Field of the Invention --

Please add the following section heading before the paragraph beginning on line 8 of page 1 of the application:

-- 2. Description of Related Art --

Please add the following section heading before the paragraph beginning on line 8 of page 2 of the application:

-- BRIEF SUMMARY OF THE INVENTION --

Please amend the paragraph beginning on line 8 of page 2 as follows:

-- ~~Object~~ An object of the present invention is that of developing a combination of process and production line based on the thin slab technique by means of a hot strip finishing mill, such as to allow the manufacture of ultrathin hot strip, 0.4 mm thick as minimum with a maximum width of 2.2 m in a thermo-mechanical way according to the T. T. T. diagram, having a controlled crystal structure, and consequently controlled properties of the material. --

Please amend the paragraph beginning on line 21 of page 2 as follows:

-- The above-mentioned objects are achieved in particular by means of the features, non obvious in the art, ~~which are defined in the independent claims 1 and 13.~~ --

Please add the following section heading before the paragraph beginning on line 24 of page 2 of the application:

-- BRIEF DESCRIPTION OF THE DRAWINGS --

Please add the following section heading before the paragraph beginning on line 5 of page 3 of the application:

-- DETAILED DESCRIPTION OF THE INVENTION --

Please amend the paragraph beginning on line 15 of page 3 as follows:

-- It has been found that the mould will preferably have a geometry such that on leaving it the slab shows a not perfectly rectangular section, but with a central crown of a value preferably between 0.5 and 5 mm at each side 2.2. The subsequent pre-strip, after solid core rolling, will preferably still have a central crown of up to 0.4 mm at each side ~~5.3~~ 2.3. --

Please amend the paragraph beginning on line 20 of page 3 as follows:

-- A specific hardware device with relative software may be provided in order to obtain the geometrical tolerances required by this strip, so as to contain the thickness variations of the slab leaving the ~~continues~~ continuous caster within the range of values of ± 1 mm, irrespective of roll gaps and wear. For this purpose an active position actuator/regulator and parallelism control combined with the first part of the casting machine may be provided. --

Please amend the paragraph beginning on line 28 of page 3 as follows:

-- A reduction of the above-mentioned slab thickness during the solidification is considered as the most important technical advantage of the process and the relevant quantity is referred to as parameter V1, being also indicated as datum 22.1 of the control system, with reference to figure 2. It is in fact a consequence of said values of thickness reduction the achievement of a fine crystal structure and a reduced inner cracks and segregation, thereby resulting in improved characteristics of the material. Furthermore the slab thickness reduction can be chosen so as to optimize the conditions in the whole manufacturing process. --

Please amend the paragraph beginning on line 8 of page 6 as follows:

-- By keeping preferably low the distance 6 between the continuous casting machine 1 and the entry into HRM 5 e. g. comprised between 0.5 and 4m, the slab 2.2 which is solidified at the end of the roller table 3 is fed forward in the roughing mill with a temperature of 1450 °C, near the temperature of steel solidification 7.1, in its most inner region 7, thereby with a "hot

core" as it is usually said, while the temperature at the surface is of 1150 °C. Such an inverted gradient of temperature 7.2 of the slab 2.2 on half thickness of the slab itself at the entry of HRM 5 allows for a more homogeneous and uniform transformation throughout the thickness of the material to be rolled 5.2, since also the so-called "core" is transformed more homogeneously. This also appears from the edges of the material to be rolled, which are convex and well defined at the exit from HRM 5. --

Please amend the paragraph beginning on line 22 of page 7 as follows:

-- When passing throughout the induction heating pass 8 the intermediate strip 5.3 is fed with a thickness between 30 and 8 mm according to the desired hot rolled strip 13 in view of the programmed thermo-mechanical rolling 14 as seen in the T. T. T. diagram 14.1 (see Figure 2), when bearing in mind the thickness of the hot rolled strip and the type of structure at the temperature between 1100 °C and 1400 °C. Such a flexibility in managing the temperature can be reached only through an induction heating, whereas a furnace fed by primary energy is slow and its temperature cannot change from a hot strip to another. --

Please amend the paragraph beginning on line 5 of page 10 as follows:

-- The above-mentioned six advantages of the technical process with their high flexibility are used as best as possible for the rolling in the finishing mill 18, which consists of six stands at maximum in order to accomplish with an exit temperature 21 > AC1 of about 750 °C the management of the controlled thermo- mechanical temperature 14 of the hot rolled strip 13 according to the T. T. T. diagram 14.1, with the thickness of the hot rolled strip ~~13.1~~ 13 being prefixed between a minimum of 0.4 mm and a maximum of 12 mm. --

Please amend the paragraph beginning on line 19 of page 12 as follows:

-- Figure 4 shows the strip temperatures in function of the subsequent passes in the time, expressed in seconds, against different temperatures of the intermediate strip when leaving the induction heating path 8. The diagram leads to the same indications as diagram of figure 3, but makes still clearer that with a strip thickness reduction the cooling increases more than proportionally according to the Boltzmann radiation law and the conditions for a strip of only 0.4 mm become correspondingly more critical. The purpose is that of maintaining a temperature in

the field of values 24 between AC3 and AC1 of 900-750 °C, such as for a carbon steel with the composition:

- 0.15% C
- 1.50% Mn
- 1.50% Si
- 0.50% Cu

and a temperature in the martensitic zone of about 430 °C. To this purpose and mainly not to go down below the lower limit AC1, it is possible to intervene by increasing the casting speed ~~2.3~~ in case of continuous rolling and increasing the entry speed 18.2 into the finishing mill in case of standard production of coils. --